

ТЕНДЕНЦИИ РАЗВИТИЯ МУЗЫКАЛЬНОГО ИСКУССТВА И ХУДОЖЕСТВЕННОГО ОБРАЗОВАНИЯ: ИСТОРИЯ, ТЕОРИЯ, ПРАКТИКА

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A SELECTED REVIEW OF CHORDS AND SCALES IN THE SCHILLINGER SYSTEM OF MUSICAL COMPOSITION

Abstract. Joseph Moiseyevitch Schillinger's two-volume *Schillinger System* is organized into twelve books, two of which are dealt with in this article. Schillinger's approach to scales (in Book II, "Theory of Pitch-Scales") is juxtaposed with that of other pedagogical/theoretical works, chiefly Hába's *Neue Harmonielehre*, Slonimsky's *Thesaurus of Scales and Melodic Patterns*, and Schillinger's own earlier work, *Kaleidophone*. In Book IX, "General Theory of Harmony", Schillinger enumerates trichords and tetrachords; method and results are examined in detail, and compared with those used in *Neue Harmonielehre* and *Kaleidophone*.

Аннотация. Иосиф Моисеевич Шиллингер опубликовал *Систему Шиллингера (Schillinger System)* в двухтомном издании, состоящим из двенадцати книг, две из которых рассматриваются в данной статье. Шиллингеровский подход к звукорядам в Книге II «Теория высотных шкал» сопоставляется с методами других теоретико-педагогических работ: *Новое учение о гармонии (Neue Harmonielehre)* Алоиса Хабы, *Тезаурус гамм и мелодических оборотов (Thesaurus of Scales and Melodic Patterns)* Николая Слонимского и с другой работой Шиллингера *Калейдофон (Kaleidophone)*. В Книге IX «Общая теория гармонии» Шиллингер перечисляет трихорды и тетрахорды; методы и результаты детально

анализируются и сравниваются с методами, использованными в *Новом учении о гармонии* и в *Калейдофоне*.

Key Words: Theory, Composition, Pedagogy, Sets, Scales, Schillinger, Hába, Slonimsky.

Ключевые слова: теория, композиция, педагогика, аккорды, звукоряды, Шиллингер, Хаба, Слонимский.

Joseph Moiseyevitch Schillinger's two-volume work *The Schillinger System of Musical Composition* (1946) is organized into twelve books. The first half of this article deals with Book II, "Theory of Pitch-Scales," investigating Schillinger's four groups of pitch-scales. The second half of the paper pertains to Book IX, "General Theory of Harmony," and examines Schillinger's enumeration of trichords and tetrachords.³ Throughout, *The Schillinger System* will be compared with other theoretical works, chiefly Alois Hába's *Neue Harmonielehre* (1927), Slonimsky's *Thesaurus of Scales and Melodic Patterns* (1947), and Schillinger's own earlier work, *Kaleidophone: New Resources of Melody and Harmony* (1940).

Schillinger's first group of pitch-scales, set out in chapter two, includes "diatonic and related scales." His treatment of the ecclesiastical modes, with its diagrams of tetrachords linked by whole-step, recalls that of Hába [4, P. 111–114]. These types of diagrams have of course been used since antiquity, but it is notable that both authors draw them into the discussion, presenting them as historical models that lend both inspiration and ostensible authority to their work. By expanding upon these historical models, they perhaps hope that their work will be viewed as logically successive.

Hába uses the modes and tetrachords to illustrate and establish four of his five rather unusual types of scalar symmetry. For example, in the first type of symmetry, a tetrachordal cell repeats after the interruption of a

³ Schillinger does not systematically approach chords with more than four-notes.

whole-step, as exhibited by the Ionian and Phrygian modes [4, P. 113–115]. Hába then begins charting the scalar possibilities of each type of symmetry, thus fleshing out a somewhat arbitrary categorization system, albeit with a rigorous method [4, P. 116–123]. This rigorous method is roughly analogous to that used by Schillinger in conjunction with his third group of pitch-scales, which will be discussed later.

Schillinger expands on the mode/tetrachord model for perhaps some of the same reasons as Hába, but does not use them as the basis for an exhaustive system. He identifies three fundamental tetrachords—major, minor I, and minor II—plus the harmonic tetrachord, which contains an augmented second. These tetrachords, separated by a whole-step (in all but two cases), combine to produce the commonly used scales⁴. He identifies these “scales in common use” by name, and it is notable that some of these names are in use by jazz musicians and pedagogues today, such as “harmonic major” and “double harmonic” [8, P. 113]⁵. Jazz pedagogy as it exists today had not yet evolved, and theoretical instruction often came directly or indirectly from works such as *The Schillinger System* or the *Thesaurus*. However, jazz musicians and composers had already been using many such scales by the time Schillinger’s work was published. It is therefore not entirely clear that the names of these scales originated with Schillinger, although his significance as a teacher would support the hypothesis that they did.

Schillinger returns to the topic of modes and tetrachords in chapter three, “Evolution of Pitch-Scale Styles.” He notes the importance of “circular pitch displacement” of the natural major scale in the evolution of European music,⁶ and suggests that this development can be continued by applying the same modal approach to harmonic major, harmonic minor,

⁴ Some of these scales are simply rotations of each other. For example, natural major and minor are rotations of each other, as are melodic major and minor.

⁵ The names “harmonic major” and “double harmonic” have been especially reinforced by the pedagogical works of David Baker, for example [2, P. 50–51].

⁶ Schillinger in fact goes so far as to state that “the whole European culture of music is an outcome of circular pitch displacement in the natural major or Ionian mode” [8, P. 122].

and melodic minor, “yielding twenty-one more displacement-scales,” seven from each collection [8, P. 122]. Here again we find a significant link with the jazz tradition, also with the same question of nominal precedence: jazz theorists and pedagogues would later codify a system of melodic minor modes and harmonies that is standard among jazz musicians today.⁷

Schillinger’s second group of pitch-scales (discussed in chapter five) is peculiar indeed, as it represents no new collections, but rather a compositional technique that can be applied to any existing scale. “Scales” in this category are produced by intervallic expansion. The first expansion is achieved by proceeding through the original scale, but skipping one pitch every time, cycling through the original scale twice before returning to the tonic. The C major scale in the first expansion is thus C,E,G,B,D,F,A. The second expansion is achieved similarly, but two pitches are skipped rather than one. Accordingly, the second expansion of C major is C,F,B,E,A,D,G. Since there are seven “units” (scale degrees) in the C major scale, six expansions are possible (the seventh expansion would put the units into the original order, and thus does not qualify as an expansion). Melodies can also be “transcribed” into other expansions by abstracting the melody into an ordered set of scale degrees, and then reading that set of scale degrees in whatever expanded scale is desired. In C major, the melody D,B,A is represented by the scale degrees 2,7,6. These scale degrees read in the first expansion yield the expanded melody E,A,F, preserving the contour of the original melody but expanding it intervallically. This compositional technique thus yields music suitable for what we now refer to as contour analysis.

In the third group of pitch-scales, discussed in chapter seven, Schillinger approaches scalar possibilities in a much more encyclopedic fashion. He constructs symmetrical scales based on a given number of “tonics,” points at which the scalar pattern repeats. He divides the octave

⁷ For a thorough explanation of this system, see Mark Levine’s *The Jazz Theory Book*, 1995. P. 55–77.

into two, three, four, six, and twelve equal parts, and proceeds to work out the possibilities from there, beginning with repeating scalar patterns of one unit, then two, three, and so forth. This procedure is somewhat similar to what Hába had done, as mentioned above, although it is more systematic than Hába's. It is also very similar to what Ernst Bacon had suggested in "Our Musical Idiom." Of course, Bacon did not actually write out scales—other than a couple of brief examples—but rather was interested in calculating the number of possibilities for these "equipartite" scales [1, P. 566–568]. Finally, let us observe that Schillinger's method is quite different here than what he had presented in his earlier work, *Kaleidophone*. *Kaleidophone* is a far more exhaustive survey of scalar possibilities, and does not limit itself to symmetrical scales. Instead, chord structures are systematically explored, and "leading tones" are used to connect the tones of these structures.

The fourth group of pitch-scales (dealt with in chapter eight) are the converse of the third group, with higher numbers of equal parts corresponding to larger interval-spans within several octaves rather than to smaller interval-spans within one octave. The presentation is the same as in the third group—sections of examples are grouped according to the number of tonics, and subsections are grouped according to the number of units in each repeating pattern. However, this time the set of examples are subheaded as "excerpts from complete table." Schillinger was apparently either not interested in exhaustively writing out all of the possible permutations, or he saw fit (perhaps under editorial pressure) to allow for some omissions in this work of sprawling scope.

The first half of Slonimsky's *Thesaurus of Scales and Melodic Patterns*, published shortly after *The Schillinger System*, follows the plan of Schillinger's third and fourth groups of pitch-scales, and is much more exhaustive in its coverage.⁸ The first few chapters of the *Thesaurus* deal with division of the octave into two, three, four, six, and twelve equal

⁸ The *Thesaurus* was published in 1947; *The Schillinger System* was first published in 1941.

parts. In the chapters pertaining to equal division of multiple octaves, Slonimsky uses some spans and divisions that Schillinger does not. He divides the span of five octaves into not only six parts, the quinetone progression, but also divides it into twelve parts, the diatessaron progression. He divides the span of seven octaves, not mentioned by Schillinger, into six parts, the septitone progression, and into twelve parts, the diapente progression. It is highly unlikely that these other spans and divisions were simply omitted from Schillinger's "complete chart"—Slonimsky's approach, although possibly inspired by Schillinger, is different.

For Schillinger, symmetrical divisions of more than one octave are clearly conceived of as the inverse of symmetrical divisions within one octave, as evidenced by his charts illustrating the mathematical relationships of each multi-tonic system. The third group of pitch-scales lies within the range of one octave, with endpoints labeled C to C₁ (the same labels are used when the endpoints are several octaves apart, and thus do not represent octave designations). Since these endpoints lie at a ratio of 1:2, C is represented with the number 1, and C₁ with the number 2. To represent a two tonic system, F# is thus shown as the square root of 2, placed between the two octave endpoints. Cube roots are used for three tonic systems, fourth roots for four tonic systems, and so forth. In the fourth group of pitch-scales, the octave-divisors 2, 3, 4, 6, and 12 become the powers of two that generate new values for C₁. For example, the number 12, which previously was used to divide one octave into twelve equal parts of one semitone each, now generates a multi-tonic system with endpoints that lie at a ratio of $1:2^{12}$, or 1:2048; twelfth roots of 2048 are used to divide the eleven-octave system into twelve tonics equally spaced by the interval of a major seventh—the semitone's octave complement [8, P. 151–152 and 158–159].

Slonimsky's work seems to be driven by a desire to use each interval to generate a corresponding multi-octave structure, though he nonetheless presents the results in the same order as Schillinger (with some additions).

After explaining his terminology for all intervals smaller than an octave (and for the major ninth) he states: “These basic intervals are regarded as fractions of one or more octaves” [9]. Slonimsky’s concept would thus appear to be based more on multiplication than on exponentiation.

The inclusion of the septitone (major ninth) progression seems to be justified by Slonimsky’s explanation of its name—the major ninth can be divided into seven whole-tones. He does not mention dividing the minor tenth into five minor thirds, which would seem to work out just as nicely; nor does he seem interested in simply carrying out the process systematically beyond the octave, multiplying the minor ninth by twelve to create a thirteen-octave progression. Perhaps he singled out the major ninth because he liked the consistency of dividing both five and seven octaves into both six and twelve parts.

Let us now turn our attention to Book IX of *The Schillinger System*. Schillinger’s method of enumerating the possibilities for three-note harmonies is virtually identical to Hába’s, and both theorists arrive at a total of fifty-five trichords.⁹ Hába holds the lower two notes constant while writing out all possibilities for the soprano in descending order. Schillinger does likewise, but writes out the soprano’s possibilities in ascending order. Although this deviation is trivial, it does point to a significant difference between the two: compared to Hába, Schillinger is more logical and mathematical. For Schillinger, everything happens in ascending order. This thinking is reflected in the interval numbers included in his table (Figure 31), which are given in abbreviated form in Figure 1 [8, P. 1103–1104].

⁹ Jonathan Bernard notes that “every one of the nineteen transpositionally equivalent (‘T_n’) trichords appears thrice, except for the augmented triad, which comes up only once” [3, P. 29].

Figure 1. An abbreviated presentation of interval numbers
included in Schillinger's table of trichords (Figure 31)
from Book IX of *The Schillinger System*

| | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1+1 | 1+2 | 1+3 | 1+4 | 1+5 | 1+6 | 1+7 | 1+8 | 1+9 | 1+10 |
| 2+1 | 2+2 | 2+3 | 2+4 | 2+5 | 2+6 | 2+7 | 2+8 | 2+9 | |
| 3+1 | 3+2 | 3+3 | 3+4 | 3+5 | 3+6 | 3+7 | 3+8 | | |
| . | | | | | | | | | |
| . | | | | | | | | | |
| . | | | | | | | | | |
| 10+1 | | | | | | | | | |

Ascending interval structures written in this manner immediately call to mind *Kaleidophone*, where Schillinger consistently proceeded in ascending order to help the reader (and no doubt himself) “locate any chord in the table” [7, 14]. In *Kaleidophone*, however, Schillinger does not deal with chords that have members a semitone apart, since the chords are to be filled in with scale-tones. That being the case, collating the trichords from his Table I yields the same table as above, but without chord structures involving the numeral 1, as shown in Figure 2 [7, P. 25–35].

Figure 2. An abbreviated presentation of trichordal interval numbers
collated from Table I of Schillinger's *Kaleidophone*

| | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 2+2 | 2+3 | 2+4 | 2+5 | 2+6 | 2+7 | 2+8 | 2+9 |
| 3+2 | 3+3 | 3+4 | 3+5 | 3+6 | 3+7 | 3+8 | |
| 4+2 | 4+3 | 4+4 | 4+5 | 4+6 | 4+7 | | |
| . | | | | | | | |
| . | | | | | | | |
| . | | | | | | | |
| 9+2 | | | | | | | |

Schillinger's method of listing tetrachords is very logical and continues to favor ascending order, but now differs more from Hába's method. Hába's method seems peculiar, but is easy enough to grasp on the

page. He holds a lower dyad constant as before, but also holds the soprano constant, moving the alto through all remaining note-choices. The tenor gradually moves up towards the soprano, with the alto having fewer and fewer choices available. The soprano then moves down a semitone, and the whole process is repeated. In *Kaleidophone*, Schillinger extends the system he used before, yielding the pattern shown in Figure 3 [7, 36–66].

Figure 3. An abbreviated presentation of tetrachordal interval numbers collated from Table I of Schillinger's *Kaleidophone*

| | | | | | |
|--------------|-------|-------|-------|-------|-------|
| 2+2+2 | 2+2+3 | 2+2+4 | 2+2+5 | 2+2+6 | 2+2+7 |
| 2+3+2 | 2+3+3 | 2+3+4 | 2+3+5 | 2+3+6 | |
| 2+4+2 | 2+4+3 | 2+4+4 | 2+4+5 | | |
| . | | | | | |
| . | | | | | |
| 2+7+2 | | | | | |
| | | | | | |
| 3+2+2 | 3+2+3 | 3+2+4 | 3+2+5 | 3+2+6 | |
| 3+3+2 | 3+3+3 | 3+3+4 | 3+3+5 | | |
| . | | | | | |
| . | | | | | |
| 3+6+2 | | | | | |
| | | | | | |
| 4+2+2 | . | . | . | | |
| . | | | | | |
| . | | | | | |
| 7+2+2 | | | | | |

If the table were written out in full, the consistency of its logic would be visible in the resemblance of six isosceles right triangles of steadily decreasing size. As before, the minor second is not used, yielding fifty-six different tetrachords.

Schillinger uses essentially the same logic in *The Schillinger System*, except that he permutes the third term every time it increases, rather than moving on immediately to the next highest number. Terms are permuted according to the “table of permutations” that Schillinger had listed in *Kaleidophone* [7, P. 15]. If he had printed his table of tetrachords without the interval numbers appearing above, it would be quite cumbersome to discern the pattern that he uses, since it is not entirely consistent throughout. Fortunately, he does use them, and thus the patterns can be traced, as shown in Figure 4 [8, P. 1125-1126]. In the first half of the table (ending with **5+5+1**), each cell has two numbers that are the same, and consequently there are only three first-order permutations to list. In the second half of the table, there are always three unique numbers, so there are six permutations to work through.

Figure 4. An abbreviated presentation of interval numbers included in Schillinger’s table of tetrachords (Figure 47) from Book IX of *The Schillinger System*

| | | |
|--------------|-------|-------|
| 1+1+1 | [x] | [x] |
| 1+1+2 | 1+2+1 | 2+1+1 |
| 1+1+3 | 1+3+1 | 3+1+1 |
| . | | |
| . | | |
| . | | |
| . | | |
| . | | |
| 1+1+9 | . | . |
| | | |
| 2+2+1 | 2+1+2 | 1+2+2 |
| 2+2+2 | [x] | [x] |
| 2+2+3 | 2+3+2 | 3+2+2 |
| . | | |
| . | | |
| . | | |
| 2+2+7 | . | . |

3+3+1 . . .

4+4+1 . . .

5+5+1 . . .

1+2+3 1+3+2 3+1+2 2+1+3 2+3+1 3+2+1

1+2+4 1+4+2 4+1+2 2+1+4 2+4+1 4+2+1

1+2+5 . . .

.

.

1+2+8 . . .

1+3+4 1+4+3 4+1+3 3+1+4 3+4+1 4+3+1

1+3+5 . . .

1+3+6 . . .

1+3+7 . . .

1+4+5 . . .

1+4+6 . . .

2+3+4 . . .

2+3+5 . . .

2+3+6 . . .

2+4+5 . . .

If these first-order permutations are omitted, the larger structure of the table is easier to perceive. Thus the cells that were previously flush against the left margin are re-arranged into the table shown in Figure 5 (cells shown in strikethrough do not appear in Figure 4 because they are redundant, but are provided to illustrate the process of permutation). The logical continuation of the first row of the table to the second set of rows (indicated by the line shown connecting their final numbers) is

interrupted by the operation used in rows two to five. Of course, this operation is logical as well, but it represents a departure from strict ascending order. If rows two to five were taken out, then the progression to higher numbers would be more gradual.

The total number of tetrachords presented is 165, a fact that may be of some significance. Hába also lists 165 tetrachords, but strangely states that there are 195. In “Chord, Collection, and Set in Twentieth-Century Theory,” Jonathan Bernard writes: “Perhaps the total of 195 really would

Figure 5. A rearrangement of Figure 4,
with first-order permutations omitted and redundant cells from
Figure 47 of *The Schillinger System* (Book IX) added in strikethrough

| | | | | | | | | |
|------------------|------------------|------------------|------------------|-------|-------|-------|-------|-------|
| 1+1+1 | 1+1+2 | 1+1+3 | 1+1+4 | 1+1+5 | 1+1+6 | 1+1+7 | 1+1+8 | 1+1+9 |
| 2+2+1 | 2+2+2 | 2+2+3 | 2+2+4 | 2+2+5 | 2+2+6 | 2+2+7 | | |
| 3+3+1 | 3+3+2 | 3+3+3 | 3+3+4 | 3+3+5 | | | | |
| 4+4+1 | 4+4+2 | 4+4+3 | | | | | | |
| 5+5+1 | | | | | | | | |
| 1+2+1 | 1+2+2 | 1+2+3 | 1+2+4 | 1+2+5 | 1+2+6 | 1+2+7 | 1+2+8 | |
| 1+3+1 | 1+3+2 | 1+3+3 | 1+3+4 | 1+3+5 | 1+3+6 | 1+3+7 | | |
| 1+4+1 | 1+4+2 | 1+4+3 | 1+4+4 | 1+4+5 | 1+4+6 | | | |
| 2+1+1 | . | . | | | | | | |
| 2+2+1 | . | . | | | | | | |
| 2+3+1 | 2+3+2 | 2+3+3 | 2+3+4 | 2+3+5 | 2+3+6 | | | |
| 2+4+1 | 2+4+2 | 2+4+3 | 2+4+4 | 2+4+5 | | | | |

cover every one of his possibilities of combination, but it is difficult to be certain from Hába’s presentation, for he lists only 165 on pp. 98-99, mentioning then in passing that the others have already been given in the section on construction in thirds. Just which thirty chords he might mean, though, is left unexplained” [3, P. 29].

In a footnote to this passage, Bernard mentions that “[Herbert] Eimert arrives at a total of 165 four-note chords using a procedure similar to Hába’s, although he does not provide an exhaustive enumeration”. He writes that it is “possible that Hába’s figure of 195 is a corruption of 165 that somehow became embedded in his text as he was writing it”, and has suggested in private communication that the number 195 appearing in Hába’s treatise may have been a typesetting error resulting from printing the numeral 6 upside-down.

Let us investigate directly the relevant passages from *Neue Harmonielehre*. Hába states: “In this way, we have gained 195 tetrachordal constructions. Among the tetrachords cited are also those which we have previously depicted as constructs of thirds” [4, P. 99]¹⁰. It can be inferred from this that the “previously depicted” tetrachords are the missing thirty, but Hába does not actually spell this out. If we read the passage with the number 165 instead of 195, he seems to simply say that some of the 165 tetrachords had already been mentioned in the section on construction in thirds.

Hába does mention some specific tetrachords in his discussion of trichords, indeed describing them “as constructs of thirds”, and this must be this passage to which he refers:

Many trichordal constructions, especially these ones, which contain a minor or major third, or a perfect fourth or fifth, are reminiscent of trichords or tetrachords that we already know from the tertian system: [Figure 6]

Trichords 1, 2, 5, and 6 can be looked at as tetrachordal constructions that are missing their fifths. Trichords 10 and 11 can likewise be interpreted as tetrachordal constructions; the third (E or E-flat) must still be added. Trichords 3 and 4 are six-chords, 8 and 9 are four-six chords, and 12 and 13 are incomplete dominant seventh chords (third inversion) [4, P. 97-98]¹¹.

¹⁰ Translation mine.

¹¹ Translation mine.

Figure 6. Hába, *Neue Harmonielehre*, Example 220



Of the thirteen trichords in his Example 220, Hába mentions six that could be seen as tetrachords, but two of them could have a minor or major third, yielding a total of eight possible tetrachords. If each of these tetrachords were to appear several times in a full enumeration of tetrachords, then perhaps thirty missing tetrachords could be explained. But this hypothesis seems unlikely, one reason being that many of these eight tetrachords are already equivalent to one another. Trichords 10 and 11 with the major thirds added are identical to trichords 5 and 6 with the fifths added; with the minor thirds added they are identical to trichords 1 and 2 with the fifths added. The remaining four distinct tetrachords would have to be repeated about eight times each to account for thirty.¹²

The fact that Hába, Eimert, and Schillinger all arrive at a total of 165 tetrachords suggests that their methods, however idiosyncratic, are somehow essentially the same. Furthermore, 165 must be the “correct” result, given this type of method, in the same way that fifty-five trichords was also the correct result. Therefore, the most likely hypothesis about Hába’s 195 tetrachords would seem to be that the number 195 appearing in his text is erroneous, and probably the result of a typesetting error.

In “Combinatorial Space in Nineteenth- and Early Twentieth-Century Music Theory,” Catherine Nolan argues that Bernard’s explanation of editorial corruption “is certainly plausible, but it is not a certainty, since all of Hába’s subsequent values for the number of

¹² Bernard mentions that in *Neue Harmonielehre* “each of Bacon’s forty-three tetrachords appears at least once and as many as five times” [3, P. 27 (note 37)]. If Bacon’s merely transpositionally equivalent tetrachords are repeated as many as five times, then some of Forte’s twenty-nine transpositionally and inversionally equivalent tetrachords may in fact be repeated as many as eight times in Hába. But no one had yet thought to regard a chord and its symmetrical inversion as equivalent, so Hába would not have been working along these lines when (and if) he was counting the thirty extra tetrachords.

collections of the remaining cardinalities are incorrect, and cannot be explained simply as editorial oversights” [6, P. 234]. However, 195 is greater than 165, whereas in all subsequent cardinalities, Hába cites a number smaller than the Pascal number¹³. Perhaps these later values were reduced as he grew tired of his longhand approach of writing out every possibility.

Bernard mentions that in Hába’s enumeration, “each of Bacon’s forty-three tetrachords appears at least once and as many as five times” [3, P. 27 (note 37)]. Of Hába’s treatment of chords in general, he writes that “there is nothing about this account to remind us of the cool elegance of Bacon’s reckoning. By comparison, Hába’s is messy, and also incomplete” [3, P. 29]. This prompts a question: is there something logical, or at least consistent, about the messiness of Hába, Eimert, and Schillinger? If, for example, Eimert’s and Schillinger’s lists duplicated not only the total number of tetrachords, but also repeated the same tetrachords the same number of times, that would provide evidence of some underlying logic.

To see if this might be the case, I taxonomized the tetrachords listed by Hába and Schillinger. (Eimert’s enumeration is not exhaustive, and therefore unsuitable for this procedure.) The results are summarized in Table 1.¹⁴ As can be seen, while tetrachords are often repeated the same number of times, there are many instances where they are not. Specifically, the repetitions are the same in twenty-one instances and different in eight instances. It would seem that the differences are too significant to make a claim of underlying logic on the basis of this evidence.

¹³ Nolan discusses the relevance of Pascal numbers [6, P. 211–12].

¹⁴ The notated chord accompanying Schillinger’s 1+8+1 designation appears to be a typo. I corrected it by classifying the 1+8+1 tetrachord as 0134.

Table 1
Tetrachords Listed by Hába and Schillinger

| Tetrachord | Hába | Schillinger |
|-------------------|-------------|--------------------|
| 0123 | 4 | 4 |
| 0124 | 8 | 8 |
| 0125 | 8 | 7 |
| 0126 | 8 | 8 |
| 0127 | 4 | 4 |
| 0134 | 4 | 5 |
| 0135 | 8 | 8 |
| 0136 | 9 | 8 |
| 0137 | 9 | 9 |
| 0145 | 4 | 4 |
| 0146 | 8 | 8 |
| 0147 | 8 | 8 |
| 0148 | 8 | 9 |
| 0156 | 4 | 4 |
| 0157 | 8 | 8 |
| 0158 | 5 | 4 |
| 0167 | 2 | 2 |

| Tetrachord | Hába | Schillinger |
|-------------------|-------------|--------------------|
| 0235 | 4 | 4 |
| 0236 | 7 | 8 |
| 0237 | 7 | 7 |
| 0246 | 4 | 4 |
| 0247 | 8 | 8 |
| 0248 | 4 | 4 |
| 0257 | 4 | 4 |
| 0258 | 8 | 8 |
| 0268 | 1 | 2 |
| 0347 | 4 | 3 |
| 0358 | 4 | 4 |
| 0369 | 1 | 1 |
| Total: | 165 | 165 |

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ФИЛОСОФИЯ МУЗЫКИ:

ДИСЦИПЛИНАРНОЕ ПОЛЕ И КОНЦЕПТУАЛЬНЫЕ РАМКИ

Аннотация. Рассматривая философию музыки как академическую научную дисциплину, автор показывает специфику философской рефлексии о музыке. В отличие от искусствоведения (истории и теории музыки), философия музыки исследует не историческое (жанрово-стилистическое) бытие музыки, а ее духовно-смысловое пространство как ментальное основание культуры. Определяя музыку как фундаментальный способ трансцендентального конституирования человека в мире, философия музыки открывает особую метафизическую перспективу изучения искусства.

Ключевые слова: философия музыки, творческий процесс, музыкальное мышление, художественная метафизика.